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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,944	07/31/2003	Shahriar Ahmed	42P10970D	4969
7590	04/15/2004		EXAMINER	
Michael A. Bernadicou BLAKELY, SOKOLOFF, TAYLOR & ZAMAN LLP Seventh Floor 12400 Wilshire Boulevard Los Angeles, CA 90025			ABRAHAM, FETSUM	
			ART UNIT	PAPER NUMBER
			2826	
DATE MAILED: 04/15/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,944

Applicant(s)

S.Ahmed

Examiner

Fetsum Abraham

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) the rest is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/013,075.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/12/04.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Claims rejection

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Said spacer could not have been formed by all material arrangements given in the claim. The expression "selected from.." in line 5 of the claim is probably intended to mean "selected from one of..." However, the structure is not practical as presented.

Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the claimed layers and said BiCMOS structure. It is not clear which elements in the claimed structure integrate to converge into said BiCMOS device.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 13-26 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,703,685. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed bipolar elements are all disclosed in the patent. To be specific, claims 13-16 have fully been addressed by the patented claims 1 and 2, claims 17,18 by patented claim 11, claim 19 by patented claim 9, claims 22-26 by patented claims 4 and 6.

As for claim 20, specifically, the conductivity types of the layers in the claim language are known in the making of PNP or NPN BJTs, since the art of BJT is limited to those combinations.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,13,14,16,22 are rejected under 35 U.S.C. 102(b) as being anticipated by SUZUKI (6,232,638).

As for claim 1, the patent discloses a monojunction BJT structure in the front page conforming to a process whereby in a substrate (121) isolation structures (102) have been formed and an emitter stack between the isolation structures and a self aligned recess filled with insulation material between the two isolation structures and a bipolar transistor between the isolation structures. Another alternative to said recess could also be represented by the cavity where conductor (133) is formed on.

As for claim 13, the BJT formed by the process above has the recess exposing a collector region that is later covered by electrode (133).

As for claims 14,16, an oxide interlayer (131), which is also a partial spacer that isolates the structural elements is disposed on the emitter stack, the isolation structures, and extends into the top portion of the recess between the emitter stack and one of the isolation structures.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-11,18-20, are rejected under 35 U.S.C. 103(a) as being unpatentable over SUZUKI.

As for claims 7-11, the process of making the emitter may not have been disclosed in the prior art, it, however would have been obvious for one skilled in the art to conclude the prior art emitter is formed in such a way, since an emitter conductor on a substrate must be patterned and a portion eliminated in order to fit into the overall size of the BJT structure. Further, polysilicon is a known material that is used exchangeably with other doped semiconducting materials. It would have been obvious to use such a material as active transistor layer, since it provides better conductance and carrier mobility than other doped semiconductor materials.

As for claims 18-20, although the prior art may have omitted to teach whether the base layer is intrinsic, it would have been obvious to one skilled in the art to use intrinsic base in BJTs to increase base resistance of the same.

As for the conductivity types of the device layers specifically in claims 20,22 there are only two choices in the art (P and N type materials) and both materials are used in BJT technology alternately depending on the type of transistor (PNP or NPN). Further, the prior art BJT is a monojunction structure.

Claims 1,2,12-14,16,17,22 are rejected under 35 U.S.C. 102(b) as being anticipated by SUZUKI (6,476,452).

As for claims 1,2,13,14,22 the patent discloses a monojunction BJT structure in the front page conforming to a process whereby in a substrate (101) isolation structures (106) have been formed and an emitter stack between the isolation structures and a self aligned recess filled with insulation material between the two isolation structures and a bipolar transistor between the isolation structures.

As for claim 2, there is a self-aligned collector tap on the recess.

As for claim 12, there is a buried layer in the structure of the prior art (see layer 103), and the specifics about said intrinsic base is already discussed above.

As for claim 13, the BJT formed by the process above has the recess exposing a collector region that is later covered by electrode (133).

As for claims 14,16, the spacer interlayer insulation (222) is formed on and in the claimed elements.

As for claim 17, there is a buried layer (1030 between the isolation elements.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-11,18-20,23-26, are rejected under 35 U.S.C. 103(a) as being unpatentable over SUZUKI (6,476,452).

As for claims 7-11, the process of making the emitter may not have been disclosed in the prior art, it, however would have been obvious for one skilled in the art to conclude the prior art emitter is formed in such a way, since an emitter conductor on a substrate must be patterned and a portion eliminated in order to fit into the overall size of the BJT structure. Further, polysilicon is a known material that is used exchangeably with other doped semiconducting materials. It would have been obvious to use such a material as active transistor layer, since it provides better conductance and carrier mobility than other doped semiconductor materials.

As for claims 18-20, although the prior art may have omitted to teach whether the base layer is intrinsic, it would have been obvious to one skilled in the art to use intrinsic base in BJTs to increase base resistance of the same.

As for the conductivity types of the device layers specifically in claims 20,22 there are only two choices in the art (P and N type materials) and both materials are used in BJT technology alternately depending on the type of transistor (PNP or NPN). Further, the prior art BJT is a monojunction structure.

As for claims 23,25,26 the elements of both devices are similar to one another and the prior art conforms to the claimed structural relationship between the emitter and the base.

As for claim 24, the emitter stack and the base perimeters intersect.

Claims 3-6 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fetsum Abraham whose telephone number is: 571-272-1911. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached at 571-272-1915.



Fetsum Abraham

4/12/04